

**Customer No. 03000**

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
PATENT EXAMINING OPERATION**

Applicants: Bruce S. Marks

Serial No: 09/778,325

Group Art Unit: 1774

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Examiner: Lawrence D. Ferguson

Att. Docket No.:A1019/20268

Confirmation No. 4861

For: METALLIZABLE WHITE OPAQUE FILMS, METALLIZED FILMS MADE  
THEREFROM AND LABELS MADE FROM THE METALLIZED FILMS

**DECLARATION OF BRUCE S. MARKS UNDER 37 C.F.R. § 1.132**

Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

Sir:

I, BRUCE S. MARKS, aver and say as follows:

1. I am the inventor of the subject matter disclosed and claimed in the above-captioned patent application
2. I received my Doctorate Degree in Chemical Engineering from Northwestern University in the United States in 1987.
3. From 1986 to approximately mid 1990 I worked in polymer science research for Corning Glass Works (now Corning, Inc.) in the United States.
4. From approximately mid 1990 to 1995 I worked in polyethylene and polystyrene foams research for the Dow Chemical Company in the United States.

5. From 1996 to the present I have worked in polypropylene film research for Applied Extrusion Technologies, Inc., the assignee of the above-captioned application, in the United States.

6. I am familiar with the disclosure in Wilkie U.S. Patent No. 6,022,614, which is assigned to Applied Extrusion Technologies, Inc., the assignee of the above-captioned application.

7. I also am familiar with the documents that were made of record in an Information Disclosure Statement mailed to the United States Patent and Trademark Office on September 20, 2004, including Liu et al. U.S. Patent No. 4,931,327 and Swan et al. U.S. Patent No. 4,965,123.

8. Wilkie et al. U.S. Patent No. 6,022,612, Liu et al. U.S. Patent No. 4,931,327 and Swan et al. U.S. Patent No. 4,965,123 disclose film structures utilizing cold seal adhesives.

9. For the reasons stated hereinafter, I declare that "cold seal adhesives" identified in the Wilkie et al. '612 patent, the Liu et al. '327 patent and the Swan et al. '123 patent are not "aqueous cold glue adhesives" described and claimed in the above-captioned patent application and a person skilled in the art would not understand the disclosure of such "cold seal adhesives" to be related to or have any bearing on "cold glue adhesives."

Instead, as a person of ordinary skill in the art, I declare for the reasons that follow that the terms "cold glue adhesives" and "cold seal adhesives" are both well-known in the art, and that "cold glue adhesives" are understood by those of ordinary skilled in the art to represent a class of materials distinct from and not including "cold seal adhesives."

A functional difference between cold glue adhesives and cold seal adhesives is that cold glue adhesives of the type employed in the present invention form a bond between two different substrates. A cold glue adhesive is applied at the moment of required adhesion, e.g., at the time of labeling a container. Specifically, the cold glue is applied to a surface, e.g., the surface of a

label substrate, and the label with the aqueous cold glue adhesive on its surface is applied directly to a container, e.g., a bottle, thereby achieving a bond between the surfaces of the label and container.

At the moment of application, the bond between the surfaces of the label and container is initially a weak bond. However, the bond strengthens as the aqueous solvent for the cold glue dries or cures over time.

Ultimately, the bond formed by the cold glue between the label and container is called a destruct bond, meaning that the label, for example, might be destroyed when it is separated from the container.

If a cold glue adhesive is not applied at the moment of required adhesion, i.e., if it is applied to a substrate and first allowed to dry, and, after the cold glue has dried, the substrate with the dried cold glue is applied onto a container in order to attempt to form a bond between the surfaces of the substrate and container, no bond is formed at all.

In distinction to cold glue adhesives, cold seal adhesives are not applied at the moment of required adhesion. Rather, cold seal adhesives are applied to a substrate in a separate operation from the final sealing application.

The cold seal adhesive is coated onto a substrate and then is dried on the substrate before it is employed to form a sealing function. The cold seal feels tacky to the touch; upon being dried. In fact, a cold seal adhesive is a type of pressure-sensitive adhesive, as that term is employed in the Wilkie et al. '612 patent, the Liu et al. '327 patent and the Swan et al. '123 patent.

The substrate with the coating of dried and tacky cold seal adhesive thereon is later sent to an end-user, such as a candy manufacturer, often with a separate, release layer on the

adhesive. The end-user will use the substrate with the coating of dried, cold seal adhesive thereon to seal the package by the application of pressure.

The package is sealed by bonding of the cold seal adhesive to itself using pressure at the moment of packaging. A strong bond is instantly formed, with an immediate bond strength far exceeding the bond strength initially created when a label having a cold glue adhesive initially is applied to a container.

Thus, a cold seal adhesive is designed to be adhered to itself and requires only contact pressure to form the bond.

Furthermore, if separation of the cold seal-bonded layers of the substrate is attempted, the cohesive strength of the cold seal to itself is stronger than the film substrate - that is, the cold seal/cold seal bond is stronger than the film layer. This causes the film layer to split within itself, causing irreparable film damage, thus providing evidence of tampering.

In short, a summary of the major functional differences between cold glue adhesives of the instant invention and cold seal adhesives is as follows:

A cold glue adhesive does not bond to itself or to other substrates if dried first. In distinction, a cold seal adhesive is a pressure sensitive adhesive that does bond to itself after being dried.

A cold glue adhesive is applied to a label or other substrate at the moment of required adhesion to hold two different substrates (e.g., a label and container) together to form a bond. In distinction, a cold seal adhesive employs a two-step process to get bonds: First it is applied to a substrate and then dried. Second, a bond is formed with itself in a second step on a packaging line (generally at a different physical location) using only pressure to induce the seal.

Additionally, an aqueous cold glue adhesive provides a weak initial bond, with the bond strength developing over time as the glue dries. In distinction, a cold seal adhesive is a pressure-sensitive adhesive that forms a strong, instant, initial bond; substantially greater than the initial, weak bond provided with a cold glue adhesive.

Having provided the foregoing detailed explanation of the major functional distinctions between cold glue adhesives and cold seal adhesives, I will now explain why the major functional distinctions lead to the correct interpretation, as would be understood by those of ordinary skill in the art, that the term "cold glue adhesive" defines a class of materials distinct from and not including "cold seal adhesives."

Specifically, the different functional applications of aqueous cold glue adhesives and cold seal adhesives necessitate that cold glue adhesives and cold seal adhesives must have very different formulations, which result in cold glue adhesives having very different inherent properties from cold seal adhesives. The different formulations and thus inherent properties of cold glue adhesives are required in order for the cold glue adhesives to perform the different functions, identified in detail herein above, from the functions performed by cold seal adhesives.

People skilled in the art understand the fact that the overall formulation of cold glue adhesives is completely different from the overall formulation of a cold seal adhesive. The fact is that the term "cold glue adhesive" is understood by those of ordinary skill in the art to represent a class of materials having particular formulations and functions distinct from and not including the class of materials encompassed by the term "cold seal adhesives."

Based upon the distinction in the formulations and uses of "cold seal adhesives" and "cold glue adhesives," on information and belief people skilled in the art would not be directed or motivated to consider structural features in films specifically determined to be useful with

aqueous-based “cold glue adhesives” based upon films disclosed for use with “cold seal adhesives.”

It is apparent that the use of a cold seal adhesive on packaging films as disclosed in the Liu et al. ‘327 patent does not provide any motivation for employing an aqueous cold glue adhesive on the same packaging substrate. In fact, the use of a cold glue adhesive is counter indicated in the packaging products disclosed in the Liu et al. ‘327 patent, since the adhesive is not intended to be employed for its adhesive application properties until the film has been shipped and used in a separate packaging operation, such as in the packaging of ice cream, candy bars, and confections. (Column 4, lines 1 – 3).

It is clear in the Wilkie ‘612 patent that the cold seal adhesives identified in it are essentially rubber-based adhesives distinct from the cold glue adhesives employed in the present invention. In fact, one of the significant features in the packaging films disclosed in the Wilkie et al. ‘612 patent is that a polymeric surface layer intended to receive the rubber-based cold seal adhesive is made from a blend of polyolefin and a thermoplastic rubber to provide good adhesion to the cold seal, rubber-based adhesive. This further emphasizes the distinction between aqueous cold glue adhesives of the type employed in the present invention and rubber-based, cold seal, pressure-sensitive adhesives of the type disclosed in the Wilkie ‘612 patent.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: September 24, 2004

  
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BRUCE S. MARKS